ADJUST Package Sample
Dataset Files
The sample files included in this package may be used to practice or test the Adjustment processing software. The software we recommend you download from our web site is:
ADJUST
ADJUST UTILITIES
COMPGB
CR8BB
CR8SER
GEOID (current model)
There are numerous other useful programs available, but these are the packages which you will need for this tutorial.
1. Download and inflate the ADJUST package. All WP documentation can be left in the directory, or printed and deleted, or moved to a sub-directory
2. Back on internet, download ADJUST UTILITIES:
Click on each file
Save in the ADJUST directory created in step 1
3. Download CR8BB
Instructions for using this software are not provided here, but are included in the CR8BB documentation
4. Download COMPGB (compgb.exe, compgb.doc)
Download CR8SER (cr8ser.exe, cr8ser.doc)
You don’t need to download the .for files unless you want the fortran source code
5. Download current GEOID model software:
GEOID03 for the conterminous US; GEOID99 for Alaska, Hawaiian Islands, and Puerto Rico/VI.

Adjustment Processing Tutorial

Vendor Software:
Follow vendor instructions for creating blue book and gfiles(NGS program CR8BB can be used to create the b-file).

Preliminary Processing:

1. Save original bbook (bfile) and gfile in a separate directory. Make a copy of the files in the ADJUST directory

2. Edit gfile, put in correct "Solution Coordinate Reference System Code." (Constrained Adjustment Guidelines, Section 1-IV)

3. Run CR8SER
Input: bbook
Output: serfil

4. Run COMPGB
Input: serfil, gfile, bbook
Output: compgb.out
Check for errors
Note: If you used CR8BB to create your blue book file, you may already have *86* records. Ignore errors for these records in these first runs of the checking programs. These errors will be resolved in the course of adjustment processing.

5. Run NEWCHKOB (Checking Programs, Guidelines, Section 2-I)
Input: bbook
Output: chkobs.out
Check for errors

6. Run OBSCHK (Checking Programs, Guidelines, Section 2-I)
Input: bbook, gfile
Output: obschks.out, obschkl.out
Check for errors

7. If you don't already have *86* records in your bbook file, run MAKE86:
Input: bbook
Output: bbk.86 (new bbook)

8. Run GEOID
Input: bbk.86
Output: bbk.ght

Horizontal Free Adjustment (Guidelines, Section 4):

1. Create afilef (edit existing afile) -fix 1 position, 1 ellipsoid height

2. Run ADJUST
Input: bbk.ght, afilef, gfile, NODFILE
Prompt for adjustment output filename and output blue book filename: adjf1.out, bbkf1
View adjf1.out, check for blunders
Once you are satisfied that there are no blunders or outlyers,

3. If lower than B-order, run MODGEE to scale standard errors of vectors (Guidelines, Section 4-II). Otherwise, skip step 4.
Input: gfile, scale factor (= sqrt variance of unit wt, a.k.a. std dev of unit weight)
Output: gfile.mod

4. If scaled, rerun ADJUST
Input: bbk.ght, afilef, gfile.mod, NODFILE
Prompt for output filenames: adjf2.out, bbkf2
verify variance of unit weight is approx. 1.0 for scaled vectors

Horizontal Constrained Adjustment (Guidelines, Section 5)

1. Create afilec, fix all previously published positions, all previously published ellipsoid heights (minimum, 2)

2. Run ADJUST
Input: bbkf1 or bbkf2, afilec, gfile or gfile.mod, NODFILE
Prompt for output filenames: adjc1.out, bbkc1
Check position shifts and residuals in adjc1.out, decide whether to readjust any stations, wait and check borderline cases in adjqq.out

Vertical Free Adjustment (Guidelines, Section 6-II)

1. Create afilevf, fix 1 position, one published orthometric height

2. Run ADJUST
Input: bbkf1 or bbkf2, afilevf, gfile or gfile.mod, NODFILE
Prompt for output filenames: adjvf1.out, bbkvf1
Check adjvf1.out for blunders

Vertical Constrained Adjustment (Guidelines, Section 6-II)

1. Create afilevc, fix 1 position, all published orthometric heights (minimum of 3 heights)

2. Run ADJUST
Input: bbkvf1, afilevc, gfile or gfile.mod, NODFILE
Prompt for output filenames: adjvc1.out, bbkvc1
Check shifts and residuals to see if any heights should be Readjusted

Final Free Adjustment with Accuracies (Guidelines, Section 7)

1. Copy afilef to afileqq
For A-or B-order projects, edit MM record in afileqq to scale standard deviations with a-posteriori standard deviation of unit weight (cc4 = "Y")
Run QQRECORD
Input: gfile or gfile.mod, afileqq

2. Run ADJUST
Input: bbkc1, afileqq, gfile or gfile.mod, NODFILE
Prompt for output filenames: adjqq.out
View adjqq.out(or bbaccur.out the formatted listing below), check lines of observation which fall below required accuracy, determine if readjustment is warranted

3. Run ELEVUP to create final bbook
Input: bbkvc1 (final vertical constrained output), bbkc1 (final constrained output)
Output: final.bbk

4. Run BBACCUR
Input: adjqq.out
Output: bbaccur.out

5. Run ELLACC
Input: adjqq.out
Output: ellacc.out
Edit final.bbk, add ellipsoid height accuracy (value resulting from step 5 which shows the greatest # of stations) to cc 54/55 of *86* record
NOTE: Whenever the blue book or gfile is changed because of errors or blunders, or an afile is changed to reflect a change in the constraints or options, rerun ADJUST.

Post-Processing (Guidelines, Section 8)
1. Write report
2. Double check all outputs
3. Rerun checking programs on final files
4. Process Descriptions